



**[6450-01-P]**

**DEPARTMENT OF ENERGY**

**Electric Grid Resilience Self-Assessment Tool for Distribution System**

**AGENCY:** Office of Electricity Delivery and Energy Reliability, U.S. Department of Energy.

**ACTION:** Request for Information.

**SUMMARY:** The Department of Energy (DOE) Office of Electricity Delivery and Energy Reliability (OE) is seeking comments and information from interested parties to inform the development of a pilot project concerning an interactive self-assessment tool to understand the relative resilience level of national electric grid distribution systems to extreme weather events. An interactive tool could be used by distribution utilities to identify opportunities for enhancing resilience with new technologies and/or procedures to support investment planning and related tariff filings. The focus of this Request for Information (RFI) is on the design and implementation of the interactive self-assessment resilience tool.

**DATES:** Comments must be received on or before **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** Comments can be submitted by any of the following methods and must be identified by “EGRtool”. By email: [EGRtool@hq.doe.gov](mailto:EGRtool@hq.doe.gov). Include “EGRtool” in the subject line of the message. By mail: Dan Ton, Office of Electricity Delivery and Energy Reliability, U.S. Department of Energy, Forrestal Building, Room 6E-092, 1000 Independence Avenue, SW., Washington, DC 20585. Note: Delivery of the U.S. Postal Service mail to DOE may be delayed by several weeks due to security screening. DOE, therefore, encourages those wishing to comment to submit comments electronically by e-mail.

For additional information, please contact Dan Ton, Office of Electricity Delivery and Energy Reliability, US Department of Energy, 1000 Independence Ave SW, Washington, DC 20585; Telephone: (202) 586-4618; email: [EGRtool@hq.doe.gov](mailto:EGRtool@hq.doe.gov).

## **SUPPLEMENTARY INFORMATION:**

### **I. BACKGROUND**

With the release of Presidential Policy Directive 21 (PPD-21), the nation has started to focus in earnest on the resilience of our critical infrastructure. In the face of the increasing extreme weather events and other stresses or disturbances, the resilience of critical infrastructure, especially the energy infrastructure, has become paramount. Building upon the insights that have been gained through the development of the Cybersecurity Capability Maturity Model, the Electricity Subsector Cybersecurity Capability Maturity Model, and the Smart Grid Maturity Model, DOE-OE would like to build a complementary capability regarding the resilience of electric distribution infrastructure.

For the purposes of this RFI, the definition of resilience is “the ability of an entity — e.g., asset, organization, community, region — to anticipate, resist, absorb, respond to, adapt to, and recover from a disturbance.”<sup>1</sup>

This definition provides the framework for four domains that can be used to understand the current level of resilience of distribution system infrastructure. Through these domains, distribution utilities will be able to make informed decisions on strengthening resiliency, based on identifiable areas where future investments in new technologies and operating procedures could be made. The four domains are:

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<sup>1</sup> Carlson, L., et al., 2012, Resilience Theory and Applications, Argonne National Laboratory, Decision and Information Sciences Division, ANL/DIS-12-1, Argonne, Ill, USA, available at <http://www.dis.anl.gov/pubs/72218.pdf> (accessed April 9, 2015).

**Preparedness:** activities undertaken by an entity in anticipation of the threats/hazards, and the possible consequences, to which it is subject.

**Mitigation Measures:** characterize the facility's capabilities to resist a threat/hazard or to absorb the consequences from the threat/hazard.

**Response Capabilities:** immediate and ongoing activities, tasks, programs, and systems that have been undertaken or developed to respond and adapt to the adverse effects of an event.

**Recovery Mechanisms:** activities and programs designed to be effective and efficient in returning operating conditions to a level that is acceptable to the entity.

Underneath all four domains lie questions that contains specific information for each of the domains. Examples of questions that can be asked with specific reference to resilience are:

- What procedures are included in your emergency action plan? [**Preparedness**]
- To date, what smart grid technologies have you incorporated into your distribution system? [**Mitigation Measures**]
- Does the control and dispatch center use a distribution management system? [**Response Capabilities**]
- What service restoration method(s) does the utility use? [**Recovery Mechanisms**]

For each of these questions there will be a set of distinct answers. This method of construction allows consistent, objective information collection for all entities interested in using the model.

In cooperation with the utility industry, a working group will be created to assist in determining the direction of the program.

## **II. REQUEST FOR INFORMATION**

In order to develop this pilot project, DOE would like input from resilience experts in the electric distribution industry to gauge the interest and usefulness of the proposed decision support tool.

This RFI provides the public and industry stakeholders with the opportunity to provide their view on the development of a resilience tool. The intent of this RFI is to solicit information pertinent to the need and viability of the resilience assessment tool. The information obtained is meant to be used by DOE for tool design and strategy development purposes. In your comments, please reference the question(s) to which you are responding, as well as provide other pertinent information.

#### **A. Resilience Assessment Tool Need**

- 1) Would a resilience assessment tool be of interest for electric distribution utilities?
- 2) What would you like to see in such a model should it exist (i.e., functionality, presentation, accessibility?)

#### **B. Resilience Tool Criteria/Domains**

There are four key domains proposed for resilience: preparedness, mitigation measures, response and recovery. Each of these components has subcomponents as detailed below:

- a. **Preparedness:** Awareness and Planning
  - b. **Mitigation Measures:** Extreme Weather Mitigation, Utility Mitigation, and Dependencies Mitigation
  - c. **Response Capabilities:** Internal Capabilities and External Capabilities
  - d. **Recovery Mechanisms:** Resource Restoration Agreements and Utility Service Restoration
- 3) Do these components and subcomponents make sense as contributors to electric distribution system resilience?

- 4) What is missing, or should be taken away?

**C. Data Protection**

- 5) What are your concerns about data protection if asked to submit anonymous aggregate data for a national average for electric distribution resilience?
- 6) Data protection is recognized as an important consideration for utility participation in such an assessment model. What are your opinions and recommendations on data protection?

**D. Working Group Participation**

- 7) Would your utility be willing to participate in a working group intent on constructing the relative importance of the different components and subcomponents to the overall resilience of the system? Who would be the appropriate person within your utility to participate in such a working group?
- 8) Are there others who you would suggest to provide early feedback on tool development?
- 9) Is your utility interested in being part of a demonstration or pilot during early testing?

**E. Other Feedback**

Additional comments that may not be captured in replies these questions, but are considered relevant by respondents are highly encouraged.

Authority: Presidential Policy Directive-21.

Issued at Washington, DC on June 25, 2015.

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